

4765

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Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: SE. Alaska

11-5613

DESCRIPTIVE REPORT.

Hydrographic ¹⁰ Sheet No. 4765

LOCALITY:

Keku Strait

Summit Island to Beacon I.

1927

CHIEF OF PARTY:

H.A. Cotton

G. & G. SURVY
L. A. A.
MAY 5-1928
Acc. No.

4765

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 4765

(Field Number 10) 4765

BIG JOHN BAY

to

SUMMIT ISLAND

KEKU STRAIT

S. E. Alaska

U.S.S. EXPLORER

Season of 1927

Scale 1:10,000

AUTHORITY:

The work on this sheet was executed under authority contained in orders to the Commanding Officer, U.S.S. EXPLORER, dated February 18, 1927. ✓

GENERAL DESCRIPTION OF COAST:

The coast line within the limits of this sheet is comparatively flat, with low, wooded land extending from $\frac{1}{2}$ to 1 mile inland, gradually rising on the west to form a long, continuous ridge. On the east it is more broken. ✓ One long ridge begins just south of IRISH CREEK and extends in a southeasterly direction. The most outstanding elevation on the sheet is HIGH ISLAND. On account of the character of the area this elevation is not particularly noticeable for any great distance.

The Lighthouse Bureau has marked the main channel on this sheet with large beacons. The beacons are numbered from south to north. ✓

CURRENTS:

There is always some current, but it reaches its maximum velocity between $\frac{1}{2}$ and $\frac{1}{4}$ tide. In the wider sections of the channel the current is never strong enough to be dangerous. The strongest current occurs between Beacons 15 and 19, and reaches a velocity of about $4\frac{1}{2}$ knots at $\frac{1}{2}$ tide at THE SUMMIT. ✓ The current is indicated at other places opposite HIGH ISLAND and northward, by slow eddies.

Boats should not attempt to go thru the passage opposite SUMMIT ISLAND at less than $\frac{1}{2}$ tide. ✓

LANDMARKS:

The only land marks of any value to navigation are the beacons maintained by the Lighthouse Bureau. These beacons are 15 to 18 feet high and are all wooden tripods boarded three sides, with center poles and vanes, except ✓

6 and 6A, which are steel spindles set in concrete bases. Positions of these beacons are given on form 567 attached to the topographic descriptive report. The following numbers come on this sheet.

Beacon 4	Beacon 12
Spindle 6	Beacon 14
Spindle 6A	Beacon 15
Beacon 8	Beacon 17
Beacon 10	Beacon 19

BARS AND CHANNELS:

The main channel is well marked by the beacons. The usual course after passing beacon 14 going south is to steer for the point of HIGH ISLAND at triangulation station STEEP until Beacon 12 shows up. After passing Beacon 12 the channel can be kept by following the beacons. Another channel used by Indians and people familiar with the area follows the western side of the strait, passing between the sand bar at Triangulation Station SAND and the island marked by signals RIT and TOR, continuing by the point at signal RUM and by Triangulation Station OVER, passing north of small island marked by signals BUS and UM and through the group of small islands into the main channel. This area is very much cut up by sand bars, reefs and rocks, and unless familiar with the locality the main channel should be always be followed.

That part of the channel called THE SUMMIT was inspected at minus three feet tide. The section is full of small boulders that can be seen at the lowest stages of the tide. The soundings shown do not give the controlling depths. The controlling depth is given by the sunken rock marked "covered 1 ft. at MLLW".

(For completer description of this passage see copy of Coast Pilot Notes attached to Descriptive Report of Hydrographic Sheet No. 6.)

ROCKS AND DANGERS TO BE AVOIDED:

- (a) Passage between Beacon 12 and HIGH ISLAND should not be attempted on account of a rock which bares at low water 346 meters $15\frac{1}{2}$ degrees (true) from Beacon 12. ✓
- (b) Beacon 19 should always be passed close-to on account of the reef which bares 2 feet at low water 227 meters 32 degrees (true) from Beacon 19. ✓
- (c) A rock awash at low water 230 meters $298\frac{1}{2}$ degrees (true) from Triangulation Station NEAR should be avoided by keeping closer to Beacon 10.
- (d) Rock bares $\frac{1}{2}$ tide 128 meters 167 degrees (true) from Triangulation Station NEAR. ✓
- (e) Reef awash at High Water at three points designated by signal ROK. ✓
- (f) Rock bares $\frac{1}{2}$ tide 168 meters 113 degrees (true) from Triangulation Station GRASS. ✓
- (g) Rock awash at low water 350 meters 140 degrees (true) from Triangulation Station GRASS. ✓
- (h) Rock bares 2 feet at low water 815 meters $146\frac{1}{2}$ degrees (true) from Triangulation Station GRASS. ✓
- (i) Rock bares 1 foot at low water 530 meters 342 degrees (true) from Triangulation Station FAST. ✓
- (j) Sunken rock covered 1 foot at MLLW 82 meters 310 degrees (true) from Triangulation Station FAST. ✓

This rock was located by planetable at minus tide. It is not a sharp rock, but is a sort of smooth and oval shaped formation.

- (k) Reef bares $\frac{1}{2}$ tide 150 meters 180 degrees (true) from Triangulation Station MOST. ✓

(l) A rock bearing at $\frac{1}{4}$ tide 800 meters 124 degrees (true) from Triangulation Station POZ is not indicated by the adjacent soundings. It was located by sextant angles from the rock. ✓

(m) A shoal marked by kelp and having a least depth on it of 9 feet lies 673 meters ^{eter}~~eters~~ 246 degrees (true) from Triangulation Station HI. ✓

(n) A shoal having a least depth of 9 feet lies southeastward of Beacon 19, 563 meters ^{eter}~~eters~~ 348 degrees (true) from Triangulation Station NEAR. ✓

(o) A shoal having a least depth of 19 feet lies 482 meters 296 degrees (true) from Triangulation Station HI. ✓

ANCHORAGES:

This whole area is fairly well protected on account of its narrowness, from any sort of blow except from northerly or southerly directions. While waiting to go through the pass on high tide small boats and fishing craft most usually tie up to some piles at signal OUT or to some alongside of a cliff just off Triangulation Station STEEP. While working in the vicinity the EXPLORER was anchored about mid way between Triangulation Stations STEEP and AX on a line through both. ✓

The launches anchored at various times while working at the following places: ✓

- (a) Between Triangulation Station POZ at the north end of HIGH ISLAND and the small island marked by signals IM and WIL.
- (b) About 350 meters south (true) of small island marked by signal POR. ✓
- (c) About midway between Triangulation Station GRASS and signal SIT.

SURVEY METHODS:

All the sounding on this sheet was done by hand lead from launches no. 47 and W. D. Tender #2 except one line parallel to the channel. Channel lines were run only at times of slack water, or at such times when the current was weak enough to allow vertical casts. The cross-channel lines were

run first.

Soundings were plotted to the next lowest foot in all cases except where the fraction would help determine the low water limits.

NEW PLACE NAMES:

The narrowest part of the channel is known locally as THE SUMMIT.

The largest island in that vicinity designated by Beacon 4 is known as SUMMIT ISLAND.

The large island in the center of the sheet is known as HIGH ISLAND-- perhaps on account of being quite high and steep-to on the western side.

The large creek to the southeastward of HIGH ISLAND is known as IRISH CREEK.

All these names are well established locally, also they are contained in the records of the Forestry Bureau office at Ketchikan, Alaska.

The origin of the name IRISH CREEK could not be ascertained.

Examined, approved and forwarded,

Harold A. Cotton
Harold A. Cotton,
Commanding Officer,
U.S.C. & G.S.S. EXPLORER.

Respectfully submitted,

Ira T. Sanders
Ira T. Sanders,
Jr. H. & G. Engr.,
U.S.C. & G.S.S. EXPLORER.
(in absence of C. K. Green).

STATISTICS

DATE	VOL.	DAY	BOAT	STAT. MI.	POS.	SOUNDINGS		AREA	MILES
						HAND	MACH.		TO & FROM WK.
FIRST PARTY									
10-10-27	1	a	T #2	10.5	112	345			6.5
10-11-27	1	b	T #2	13.4	129	426			6.2
10-12-27	1 & 2	c	T #2	14.1	150	660			1.3
10-13-27	2	d	T #2	9.7	120	441			3.7
TOTALS				47.7	511	1872	0	2.0	17.7
SECOND PARTY									
10-10-27	1	a	# 47	13.6	104	388			2.5
10-11-27	1	b	# 47	18.5	134	584	44		4.1
10-13-27	2	c	# 47	2.0	13	51			2.0
10-15-27	2	d	# 47	12.4	92	441			6.6
10-16-27	2	e	# 47	10.0	78	385			11.4
10-19-27	3	f	Scan.		7	7			
TO LS				56.5	428	1856	44	5.5	26.6
TOTALS OF BOTH PARTIES				104.2	939	3728	44	7.5	44.3

May 12, 1928

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET

4765

Locality: **KNU STRAIT, S.E. ALASKA**

Chief of Party: **H. A. Cotton, 1927**

Plane of reference is **M L L W**

6.6 ft. on tide staff at **Entrance Island.**

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

Shude

Chief, Division of Tides and Currents.

U.S. Coast and Geodetic Survey
Field Section
September 7, 1928

Report on sheet No. 4765, S.E. Alaska.

Reference data:

Chief of party - Harold A. Cotton;
Surveyed by C.K. Green & W. Geidlick
Protracted by E.V. Donald
Soundings pencilled by Ira T. Sanders
Verified by J. T. Stessin
Worked by J. T. Stessin

1. Number of signals erroneously plotted or transferred - none;
2. Number of positions on sheet - 939;
3. Number of positions checked - 280 being 29.82% of the total number;
4. Number of positions revised - One, being .107% of the total number;
5. Number of soundings recorded - 3728;
6. Number of soundings revised - 218, being 5.85% of the total number.

Note: signals are checked by J. T. Stessin; verified by R.L. Johnston.

The number of soundings revised includes soundings that were not plotted at all, the soundings that had to be changed because of the incorrect conversion of the tenths into whole feet - all tenths of foot were disregarded both in negative and positive soundings, - the soundings that

had to be re-plotted according to the irregular time intervals, and a few soundings changed at the points of coincidence, where the smaller depth shown should be shown, not the larger, except in narrow channels.

In the descriptive report, page five, the writer states that the soundings were plotted to the next lowest (lower) foot in all cases. He was probably misguided by one of the old instruction books.

On page two of the old typewritten guide for inking hydrographic sheets in the Field Section a draftsman is instructed to omit all fractions in using feet, but in the latest Hydrographic Manual of 1928, page 19, instructions are given to enter as ^{the next} whole next foot every eight tenths ^{of a foot} or more if soundings unless soundings are not reduced to tenths of foot.

The low water line transferred from topographic sheet No. 4765 had to be corrected wherever it did not coincide with the plotted zero soundings. This new zero line is drawn in a yellow color; the former in black ink.

The geographical names found on the sheet were inked on the field.

The depth curves were not pencilled in the field. A number of shoals encountered on this smooth sheet involved some difficulty in ascertaining the exact direction of some parts of some of the depth curves; a dotted depth ~~curve~~ curve is used for depths assumed in usual manner.

All rocks shown on boat sheet, but not shown on smooth sheet, were transferred upon the latter and inked.

The field drafting is neat and the lettering is legible.

Boat The angles determining the boat position 11 a (blue) were ~~discarded~~ rejected.

The difference of scale intervals between boat positions not corresponding to time intervals in the field book can be explained by the existence of currents, not by the change of boat speed.

DEPARTMENT OF COMMERCE

AND REFER TO NO. 11-DEM

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

January 18, 1929.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4765

Keku Strait, Southeast Alaska

Surveyed in 1927

Instructions dated February 18, 1927 (EXPLORER)

Chief of Party, H. A. Cotton.

Surveyed by C. K. Green, W. Weidlich.

Protracted by E. V. Donald.

Soundings plotted by Ira T. Sanders.

Verified and inked by J. T. Stessin.

1. The records conform to the requirements of the General Instructions.
2. The plan and extent of development satisfy the specific instructions generally with the exception of the development in the main channel south of Summit Island which is insufficient for charting purposes. This will be mentioned in greater detail below.
3. The sounding line crossings are generally adequate with the exception of a number of instances in the main channel between lat. $56^{\circ} 44'$ and lat. $56^{\circ} 46 \frac{1}{2}'$ where the differences exceed the allowable limits. In these cases the lines running with the channel are usually the deeper ones although there are a number of instances where the reverse is true. There is no satisfactory explanation for these differences. Some of the soundings may have been taken when the current was strong, which would affect their accuracy. However, no current information is available for this immediate locality and hence it is impossible to determine what the strength of the current was at the various times. As no critical depths are involved, the soundings were accepted throughout.
4. The usual depth curves could generally be drawn. There are many cases where the lines were too far apart to permit of an accurate delineation and in such cases the curves were shown in a broken line.

appears
1-50
irregular
the bottom
See H.
4943
AL 3

5. The usual field plotting was done by the field party and was satisfactory.
6. The junction with H. 4764 on the south is unsatisfactory. This will be taken up in the review for that sheet.

The junction with H. 4766 on the north is satisfactory.

7. In so far as the main channel is concerned no additional work seems necessary for charting purposes except at the lower end of the sheet where it joins H. 4764 (see review for that sheet.) When further work is done here, the examination should extend as far north as the northern end of Summit Island. The shoaling in the main channel in lat. $56^{\circ} 44'$ 1000 m. should also be investigated.

Examined
in
H-4943

Outside of the main channel the survey could hardly be considered as complete. There is evidence of a channel that branches off the main channel at \odot Spindle 6 and runs to the northwest and west to meet the channel to the east of \odot Mur. This area is insufficiently developed to be of value to navigation. There is also an indication of a channel that connects the above mentioned channel with the main channel just below Beacon 17. A more thorough development of this cut-off might disclose water enough to avoid the sunken rock in the main channel near Beacon 17. There are numerous other indications (such as the 29 foot shoal in lat. $56^{\circ} 45'$ 1760 m., long. $133^{\circ} 42'$ 790 m., the spit making out to the north of \odot Ica, lat. $56^{\circ} 44 \frac{3}{4}'$, long. $133^{\circ} 43'$, and the shoaling off \triangle Poz, lat. $56^{\circ} 44 \frac{3}{4}'$, long. $133^{\circ} 43 \frac{1}{2}'$), as well as open places which should be investigated whenever the commercial importance of the place warrants it. These can be readily seen by an inspection of the sheet and will therefore not be mentioned here specifically.

Developed
in
H-4945

Developed
on
H-4943

8. Reviewed by A. L. Shalowitz, January, 1929.

Approved:

A. M. Sobieralski
Chief, Section of Field Records (Charts)

Frank S. Proctor
Chief, Section of Field Work (H. & T.)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO.

4765

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 10

REGISTER NO. 4765

State SE. Alaska

General locality Southeast Alaska Keku Strait

Locality Summit Island
~~Keku Strait~~ to Beacon I.*Summit I.
to Beacon I.*

Scale 1:10,000 Date of survey Sept., Oct. 10-15, 1927.

Vessel Steamer EXPLORER

Chief of Party Harold A. Cotton

Surveyed by C. K. Green & W. Weidlich

Protracted by E. V. Donald

Soundings penciled by Ira T. Sanders

Soundings in ~~stations~~ feet

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated February 18, 1927.

Remarks: Soundings plotted to next lower foot, except where feet and quarter feet were plotted to determine low water limits.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *4765* -

The following statistics will be submitted with the
cartographer's report on the sheet:

Number of positions on sheet . *939* . .
Number of positions checked *280* . .
Number of positions revised *!*
Number of soundings recorded . *3728* . .
Number of soundings revised *218* . .
Number of signals erroneously
plotted or transferred . *none*

Date: *September 8, 1928* - - - - -

Cartographer: *John T. Stessin* - - - - -